



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/743,898	01/17/2001	Simon Julian Powers	36-1406	8599

23117 7590 06/29/2005

NIXON & VANDERHYE, PC  
901 NORTH GLEBE ROAD, 11TH FLOOR  
ARLINGTON, VA 22203

EXAMINER

ANYA, CHARLES E

ART UNIT	PAPER NUMBER
----------	--------------

2194

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/743,898

Applicant(s)

POWERS ET AL.

Examiner

Charles E. Anya

Art Unit

2194

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 March 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 8/24/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

pd

### **DETAILED ACTION**

1. Claims 1-34 are pending in this application.

### ***Drawings***

2. The drawings were received on 8/24/04. These drawings are acceptable.

### ***Claim Objections***

3. Claims 2-11,13-20,22,23 and 25-27 are objected to because of the following informalities: Claims 2-11,13-20,22,23 and 25-27 appear to include typographical errors, specifically the word "A" on line 1 of the listed claims appears to have been used in error.

For the purpose of this office action the Examiner would change the word "A" to "The".

4. Claim 27 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

5. Claim 28 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claim 27 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Specifically, the storage medium storing instructions for controlling a computer is not disclosed in the specification.

***Claim Rejections - 35 USC § 101***

8. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claim 28 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Specifically, claim 28 directed to a signal carrying computer-implementable instructions for controlling a computer and this is non-statutory.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**10. Claims 1,3,4,5,7-14,16-21,23-29,33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 5,793,382 to Yerazunis et al. in view of U.S. Pat. No. 5,736,982 to Suzuki et al.**

As to claim 1, Yerazunis teaches a terminal for providing a virtual environment interface to server means which maintains said virtual environment as a plurality of zones, comprising: a client providing a user interface to the virtual environment to allow a user to control an avatar in the virtual environment (figures 1/2 Col. 5 Ln. 40 - 67, Col. Xxx 1 - 29), apparatus for estimating the likelihood of said avatar, under the control of said user in the virtual environment, moving within a predetermined range of a boundary (Col. 3 Ln. 1 - 18), the apparatus comprising: recording means for recording the position of the avatar at intervals to obtain movement data (Col. 3 Ln. 36 - 44, Moving Object 90 Col. 7 Ln. 44 - 58), means for storing data as to the relative frequency of occurrence of different categories of said movement (Moving Object 90 Col. 7 Ln. 44 - 58), means arranged to read, from the stored data (figure 4 Col. 7 Ln. 59 - 67, Col. 8 Ln. 1 - 5);

Art Unit: 2194

likelihood of the avatar motion/movement (“...future motion...” Abstract, “...predictable locations...”, Col. 3 Ln. 4 – 8 “...plausible motion...”, Col. 4 Ln. 1 – 10 and Ln. 57 – 67, “...predictability of the motion...” Col. 21 Ln. 35 – 39) and frequency data for categories of movement such as would correspond to a potential movement of the avatar from its current position into a position within said predetermined range of said boundary (Col. 7 Ln. 21 - 28).

11. Yerazaunis is silent with reference to the client being arranged to obtain information from said server means about the status of the adjacent zone only when the avatar moving within the predetermined range of the boundary of said adjacent zone is above a threshold.

12. Suzuki teaches the client being arranged to obtain information from said server means about the status of the adjacent zone only when the avatar moving within the predetermined range of the boundary of said adjacent zone is above a threshold (Col. 6 Ln. 1 -24).

13. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings to Suzuki and Yerazunis because the teaching of Suzuki would improve the system of Yerazunis by relaying processed output audio and video data between client terminals (Suzuki Col. 6 Ln. 22 - 35).

14. As to claim 3, Suzuki teaches a terminal according to claim 1 wherein said threshold is determined in dependence upon the amount of communication traffic and/or the time taken for the communication with the server means (Col. 19 Ln. 12 - 24).

15. As to claim 4, Yerazunis teaches a terminal according to claim 1 wherein said means for storing data is arranged to discard data relating to movement after a set period of time (Col. 4 Ln. 15 - 18).

16. As to claim 5, Yerazunis teaches a terminal according to claim 1 wherein said recording means is adapted to record the position of said avatar at regular intervals of time in said virtual environment (Moving Object 90 Col. 7 Ln. 44 - 58).

17. As to claim 7, Suzuki teaches a terminal according to claim 1, wherein said predetermined range is dependent upon a range of awareness of said avatar within which said avatar can experience the virtual environment (Col 6 Ln. 1 - 24).

18. As to claim 8, Yerazunis teaches a terminal according to claim 1, wherein said categories of movement are determined by run lengths (Col 3 Ln. 9 - 18).

19. As to claim 9, Yerazunis teaches a terminal according to claim 1, wherein said categories of movement are determined by run lengths within a predefined corridor (Col. 3 Ln. 9 - 18).

Art Unit: 2194

20. As to claim 10, Suzuki teaches a terminal according to claim 1, wherein said categories of movement are determined by the movement of said avatar into areas around said avatar (Col 6 Ln. 1 - 24).

21. As to claim 11, Yerazunis teaches a terminal according to claim 1, wherein said categories of movement are determined by directions and distances of movement of said avatar (Moving Object 90 Col. 7 Ln. 44 - 58).

22. As to claims 12,21,24,27,28 and 29, see the rejection of claim 1 above.

23. As to claims 13 and 26, see the rejection of claim 4 above.

24. As to claim 14, see the rejection of claim 5 above.

25. As to claims 16 and 33, see the rejection of claim 7 above.

26. As to claims 17 and 18, see the rejection of claims 8 and 9 respectively.

27. As to claims 19 and 20, see the rejection of claims 10 and 11 respectively.

28. As to claims 23 and 25, see the rejection of claim 3 above.



29. As to claim 34, see the rejection of claim 9 above.

**30. Claims 2,6,15,22,30 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 5,793,382 to Yerazunis et al. in view of U.S. Pat. No. 5,736,982 to Suzuki et al. as applied to claim 1 above, and further in view of U.S. Pat. No. 6,219,045 B1 to Leahy et al.**

31. As to claim 2, Yerazaunis is silent with reference to a terminal according to claim 1, wherein said threshold is determined in dependence upon a cost function.

32. Leahy teaches a terminal according to claim 1, wherein said threshold is determined in dependence upon a cost function (Col. 5. Ln. 25 - 50).

33. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Leahy and Yerazunis because the teaching of Leahy would improve the system by providing means for eliminating slow processing and rendering of virtual world (Col. 5 Ln. 37 - 41).

34. As to claim 6, Leahy teaches a terminal according to claim 1 wherein the potential movement of the avatar takes into consideration obstructions to the movement of said avatar within said virtual environment (Col. 6 Ln. 37 - 47).

35. As to claims 15 and 22, see the rejection of claims 6 and 2 respectively.

36. As to claim 30, see the rejection of claims 2 and 3 above.

37. As to claim 32, see the rejection of claim 6 above.

38. **Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 5,793,382 to Yerazunis et al. in view of U.S. Pat. No. 5,736,982 to Suzuki et al. as applied to claim 1 above, and further in view of U.S. Pat. No. 6,307,567 B1 to Cohen-Or.**

39. As to claim 31, Yerazunis is silent with reference to the method of claim 29, wherein monitoring the movement of the avatar includes obtaining a sliding window of data samples describing the avatar movement.

40. Cohen-Or teaches the method of claim 29, wherein monitoring the movement of the avatar includes obtaining a sliding window of data samples describing the avatar movement (Col. 5 Ln. 34 – 45).

41. It would have been obvious to one of ordinary skill the art at the time the invention was made to combine the teachings of Cohen-Or, Suzuki and Yerazunis because the teaching of Cohen-Or would improve the system of Suzuki and Yerazunis by providing system in which a client and server to render a plurality of views of a virtual world, each view corresponding to a viewpoint and method for generating the views in real time (Cohen-Or Col. 3 Ln. 15 – 19).

### ***Response to Arguments***

42. Applicant's arguments filed 3/29/05 have been fully considered but they are not persuasive.

Applicant argues in substance that (1) neither the Yerazunis nor the Suzuki prior art references teaches client being arranged to obtain information from said server means about the status of the adjacent zone only when the likelihood of the avatar moving within the predetermined range of the boundary of said adjacent zone is above a threshold and (2) neither the Yerazunis nor the Suzuki prior art references teaches storing frequency data for categories of movement such as would correspond to a potential movement of the avatar from its current position into a position within said predetermined range of said boundary.

As to point (1), Suzuki prior art reference is only used to show that when an avatar moves within a predetermined boundary (in this case D) communication between two avatars is established or position information is exchanged between terminals (Col. 6 Ln. 10 – 16, Col. 10 Ln. 22 – 34, Col. 24 Ln. 28 – 33).

As to point (2), the invention as claimed does not use the word "storing" and as such is not considered.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles E. Anya whose telephone number is (571) 272-3757. The examiner can normally be reached on M-F (8:30-6:00) First Friday off.

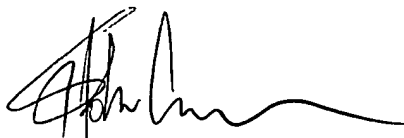
Art Unit: 2194

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, An Meng-Ai can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Charles E Anya  
Examiner  
Art Unit 2194

cea.



ST. JOHN COURTENAY III  
PRIMARY EXAMINER